CLAIMS

1. An insect bait composition for the control of insect pests comprising a glanded cotton phyllophage toxin, an amount of a feeding stimulant or food material effective to stimulate feeding thereon by a target insect, and an insecticidal agent, wherein the concentration of said phyllophage toxin in said bait is not biocidal to said target insect in the absence of said insecticidal agent, but is sufficient to significantly increase the insecticidal efficacy of said insecticidal agent to said target insect such that the combination of said phyllophage toxin and said insecticidal agent is effective for control of said target insect.

2. The insect bait composition of claim 1 wherein said insecticidal agent is provided at a concentration in said bait which is ineffective for control of said target insect in the absence of said phyllophage toxin.

3. The insect bait composition of claim 1 wherein the concentration of said phyllophage toxin in said bait is greater than or equal to about 5 ppm, and less than 500 ppm.

4. The insect bait composition of claim 3 wherein the concentration of said phyllophage toxin in said bait is greater than or equal to about 5 ppm, and less than or equal to about 450 ppm.

5. The insect bait composition of claim 4 wherein the concentration of said phyllophage toxin in said bait is greater than or equal to about 50 ppm, and less than or equal to about 450 ppm.

6. The insect bait composition of claim 1 wherein said phyllophage toxin is selected from the group consisting of gossypol, hemigossypol, desoxyhemigossypol, desoxyhemigossypol-6-methyl ether, hemigossypol-6-methyl ether, hemigossypolone, hemigossypolone-6-methyl ether, heliocide H_1, heliocide B_1, heliocide H_4, heliocide B_4, heliocide H_2, heliocide B_2, heliocide H_3, heliocide B_3, quercetin and rutin and enantiomers, pharmaceutical salts and sugar derivatives thereof, and mixtures of any of the foregoing.

7. The insect bait composition of claim 6 wherein said phyllophage toxin is selected from the group consisting of heliocide B_4, gossypolone, hemigossypolone, gossypol and hemigossypol.

8. The insect bait composition of claim 7 wherein said phyllophage toxin consists essentially of gossypol.

9. The insect bait composition of claim 1 wherein said phyllophage toxin is contained in an extract of cotton seed or cotton seed oil.

10. The insect bait of claim 1 wherein said target insect is a social insect, said feeding stimulant and feeding material are effective for stimulating feeding of said social insect upon said bait, and said insecticidal agent is effective against said social insect.

11. The insect bait composition of claim 10 wherein said social insect is selected from the group consisting of termites, fire ants, and cockroaches.

12. A termite bait composition comprising a glanded cotton phyllophage toxin and a cellulose-containing material effective as a food material upon which the termite will feed, wherein the concentration of said phyllophage toxin in said bait is not biocidal to said termite in the absence of an additional insecticidal agent, but is sufficient to significantly increase the insecticidal efficacy of said additional insecticidal agent when said termite is exposed thereto.

13. The termite bait composition of claim 12 wherein the concentration of said phyllophage toxin in said bait is greater than or equal to about 5 ppm, and less than or equal to about 500 ppm.

14. The termite bait composition of claim 13 wherein the concentration of said phyllophage toxin in said bait is greater than or equal to about 5 ppm, and less than or equal to about 450 ppm.

15. The termite bait composition of claim 14 wherein the concentration of said phyllophage toxin in said bait is greater than or equal to about 50 ppm, and less than or equal to about 450 ppm.

16. The termite bait composition of claim 12 further comprising water.

17. The termite bait composition of claim 16 wherein said water is present in said bait in an amount greater than or equal to about 50%, and less than or equal to about 90% by weight of said bait.

18. The termite bait composition of claim 16 further comprising a humectant.

19. The termite bait composition of claim 18 wherein said humectant is selected from the group consisting of agar, polyacrylamide, and methylcellulose.

20. The termite bait composition of claim 12 further comprising said additional insecticidal agent therein.

21. The termite bait composition of claim 20 wherein said additional insecticidal agent is selected from the group consisting of silafluofen, borates, sulfluramid, fluoroalkyl sulfonamides, avermectin, hydramethylnon, hexaflumuron, chlorfluazuron, lufenuron, diflubenzuron, azadirachtin, dechlorane, diiodomethyl-para-tolyl sulfone, fluorosulfonates, imidacloprid, azadirachtin, cyromazine, juvenile hormones, fenoxycarb, methoprene, hydroprene, triprene, furnesinic acid ethyl and alkoxy derivatives, pyriproxyfen, streptomycin sulfate, rifampicin, albendazole, neomycin sulfate, sorbic acid, antibiotics, antimycotics, hydramethylnon, disodium octaborate tetrahydrate, imidacloprid, fipronil, the plant *Rheuneo jupanic* Thunb. Roth, *Metarhizium anisopliae*, *Aspergillus flavus*, *Beauveria bassiania*, *Neoplectana carpocapsae*, insect viruses, *Bacillus thuringensis*, *Serratia marcescens*, *Bacillus thuringensis* toxin, *Paecilomyces* spp, *Aspergillus fumigatus*, *Aspergillus nomius*, and *Aspergillus niger*.

22. The termite bait composition of claim 20 wherein said additional insecticidal agent comprises a monoterpene derived from cotton effective to inhibit mixed function oxidases (MFOs) in termites.

23. The termite bait composition of claim 22 wherein said monoterpene agent is selected from the group consisting of α-pinene, β-pinene, myrcene, β-ocimene, α-copaene, α-humulene, β-caryophylene, β-carophyllene oxide, γ-bisabolene, β-bisabolol, limonene, piperonyl butoxide, and mixtures of the foregoing.

24. The termite bait composition of claim 12 wherein said bait is a solid.

25. A method of controlling social insects, said method comprising providing an insect bait composition to the locus of a colony of said insects, wherein said insect bait composition comprises a glanded cotton phyllophage toxin, an amount of a feeding stimulant or food material effective to stimulate feeding thereon by said social insects, and an insecticidal agent, wherein the concentration of said phyllophage toxin in said bait is not biocidal to said social insects in the absence of said insecticidal agent, but is sufficient to significantly increase the insecticidal efficacy of said insecticidal agent to said social insects such that the combination of said phyllophage toxin and said insecticidal agent is effective for control of said social insects.

26. A method of controlling subterranean termites, said method comprising:

a) providing a termite bait composition to the locus of a termite colony, wherein said termite bait composition comprises a glanded cotton phyllophage toxin and a cellulose-containing material effective as a food material upon which the termite will feed, and

b) providing an additional insecticidal agent to the locus of said termite colony,

wherein the concentration of said phyllophage toxin in said bait is not biocidal to termites in the absence of said additional insecticidal agent, but is sufficient to significantly increase the insecticidal efficacy of said additional insecticidal agent when termites are exposed thereto.

27. The method of claim 26 wherein said insecticidal agent is provided at a concentration in said bait which is ineffective for control of said target insect in the absence of said phyllophage toxin.